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neighboring districts, at least as far westward as the Mexican National railway.

The observations herein recorded were made in the autumn of 1891, during an extension of a geologic excursion through the southern states. The party in the portion of Mexico described comprised R. T. Hill, of the United States Geological Survey; Anita Newcomb McGee, M. D., A. C. Truehart, of San Antonio, and the writer. The customary hospitality of Mexico—the graceful compound of Castilian courtesy with aboriginal communal-ity—was enjoyed by the party at Doctor Arroyo, at Miquihuana, where no white woman, and Bustamante, where no white man was ever seen before in the memory of the elders, and especially at Hacienda el Carmen, the principal center of ixtli-gathering and rope-making in the lechuguilla (*Agave heterocantha*) district.

BOOK REVIEWS

The Biological Problem of Today. By Professor Dr Oscar Hertwig, Director of the Second Anatomical Institute of the University of Berlin. Authorized translation by P. Chalmers Mitchell, M. A. The Macmillan Co., New York. Price, \$1.25.

This is a translation of Hertwig's "Präformation oder Epigenese," the tract in which the most celebrated embryologist of Germany examines and discusses the theory of Weismann upon cell development and heredity.

This theory owes its force to the fact that it involves certain hypotheses of cell structure suggested by the atomic theory of chemistry. As the latter supposes matter to be composed of atoms aggregated into molecules that give it its physical characters, so Weismann conceives that protoplasm is composed of aggregations of a still higher order, of biologic units or *biophores*, each of which has a complicated but definite molecular constitution that produces the special phenomena of cell activity. To account for the specialization of cells, he holds that each special kind contains a group of groups of biophores peculiar to itself. These groups he calls *determinants*, since they determine the special character of each class of cells. To account for hereditary transmission, he assumes that certain portions of the ovum and spermatozoon contain groups of determinants from all parts of

the body, and that these are associated into groups of a higher order termed *ids*. These collectively constitute the *germ-plasm*, which he holds is transmitted practically unchanged from generation to generation. It is, in fact, the old theory of encasement or preformation reappearing in a new dress.

Hertwig holds that while there is reason to believe that protoplasm is made up of certain highly complicated units corresponding in the main to the biophores, as indeed had previously been surmised by Nägeli and De Vries, the further assumptions of Weismann are not warranted by what we know of biological phenomena. The entire ovum is not necessary for the formation of an entire individual, as assumed by his hypothesis, for both Hertwig's and Wilson's experiments show that by shaking apart the segmentation spheres (in *Amphioxus*) formed in the division of the ovum two embryos may be developed, each perfect, but smaller than usual.

Many considerations are brought forward to show that the development of cells depends largely upon external stimuli rather than upon some mysterious internal group of specially arranged particles. The formation of galls and experiments with frogs' eggs seem to show this conclusively.

Space will not permit a detailed examination of this interesting subject, which is of the highest importance in all biological sciences, bearing as it does upon the phenomena of growth and development, the action of disease, the formation of varieties, races, etc. The book is an admirable piece of scientific criticism—clear, fair, and impartial.

Señor Juan Vucetich, chief of the statistical and anthropological identification office of the police of the province of Buenos Aires, has kindly forwarded to the *Anthropologist* a copy of his work (pages i-xvii, 1-203, with 2 charts), the title of which may be rendered in English as "General Instruction for a System of Registration for the Province of Buenos Aires." This is the second edition, revised and enlarged, the first having appeared in 1895.

The author in this elaborate and painstaking work, which though based upon the system of Bertillon is by no means a copy of it, gives in much detail the plan which he has suggested and which has been adopted in Buenos Aires for the identification of criminals.